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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,632	07/25/2003	Katsuaki Minami	GOT 173	9631

23995 7590 10/27/2004

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WASHINGTON, DC 20005

EXAMINER

ZANELLI, MICHAEL J

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 10/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/626,632

Applicant(s)

MINAMI, KATSUAKI

Examiner

Michael J. Zanelli

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13 and 14 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/25/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The application filed 7/25/03 has been examined. Claims 1-14 are pending.
2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
3. The IDS filed 7/25/03 has been considered.
4. Claims 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling because of missing critical element(s). The inclusion of a controller which functions to instruct a driver to shift a transmission to improve fuel economy is critical or essential to the practice of the invention, but not included in the claim(s). See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). As clearly evident from the disclosure at paragraphs [0005-0006], the evaluation system improves fuel economy by instructing the driver to shift the transmission upward as appropriate. Neither claim 13 or 14 include this critical element. Furthermore, claims 13 and 14 appear to define systems which the invention is intended to overcome; namely, the mere display of fuel economy calculation results ([0003]).
5. Claims 2-4, 6-11, 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims include a detection device which detects a load of the engine and a fuel consumption ratio map showing the relationship of a fuel consumption ratio to the rotation speed and load of the engine. However, the specification does not disclose these elements. The specification

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does disclose various characteristic maps which relate engine rotation speed and engine torque to fuel consumption (see Figs. 2, 3, 8-11). Engine load and engine torque are not equivalent parameters, although they are related (see evidentiary patents 4,889,014 (Abs., col. 6, lines 50-55) and 4,492,112 (Fig. 4)). Thus, the specification fails to support the detection and use of the engine load as specifically set forth in the claims.

6. Claims 4, 5, 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. As per claim 4, “the detection device which detects a load of the engine”, “the detection device which detects a rotation speed of the engine” and “the fuel consumption ratio map” lack antecedence. Note claim 2 supports this language.

B. As per claim 5, “the detection device which detects the rotation speed of the engine” lacks antecedence. Note claim 2 supports this language.

C. As per claim 10, “the operating points of the engine” lacks antecedence.

D. All claims depending from a rejected base claim are also rejected as containing the same deficiencies.

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Igarashi et al. (4,492,112).

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A. Igarashi discloses an evaluation system (Fig. 1) for a vehicle with an engine (10) and manual transmission (50) comprising a detection device (for example, 14,32,36,38) which detects the operating conditions of the engine and a controller (42) which determines whether the shifting of the transmission will improve fuel economy and provides an instruction for shifting the transmission accordingly (Abs).

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al. in view of Yokoi et al. (4,411,174).

A. Igarashi is applied as above. Igarashi further discloses using a fuel consumption ratio map (Fig. 4) showing the relationship between engine rotation speed and engine load. The claimed invention differs in that the driver is instructed to shift the transmission upward when the detected rotation speed of the engine is higher than a maximum rotation speed of a region on the fuel consumption ratio map.

B. Yokoi discloses a shift control device which provides the driver with a upshift/downshift signal in order to optimize fuel economy (Abs). Yokoi discloses various characteristic maps used to correlate engine operating conditions, fuel consumption and shifting points (for example, see Figs. 4,10). The characteristic maps show predetermined engine speed thresholds which when exceeded indicate shifting to

the next higher gear. One of ordinary skill in the art would have found it obvious to implement the teachings of Yokoi in the system of Igarashi because it would have produced more comprehensive characteristic maps resulting in increased optimization of the shifting instructions.

11. Claims 2 and 4-14 are distinguishable over the prior art. As per claims 2 and 4-12, the prior art of record does not show or reasonably suggest, in combination with the other claimed subject matter, the additional claimed functions performed by the controller such as calculating fuel consumption after an upshift of the transmission, calculating a gear position most favorable to fuel economy when traveling on a flat road at the detected vehicle speed, setting various shift instructions relative to gear position (i.e. LOW or HIGH side), calculation of fuel consumption amount based on fuel consumption ratio and display thereof, correction of fuel parameters based on determined variations in the current fuel consumption ratio, depicting operating frequency of operating points of the engine on a two-dimensional map, and determining whether or not a driving operation worsens fuel economy and displaying calculated excess fuel consumption amount. As per claim 13, the prior art of record does not show or reasonably suggest, in combination with the other claimed subject matter, the additional claimed functions performed by the controller such as correction of fuel parameters based on determined variations in the current fuel consumption ratio. As per claim 14, the prior art of record does not show or reasonably suggest, in combination with the other claimed subject matter, the additional claimed functions performed by the controller such as depicting operating frequency of operating points of the engine on a two-dimensional map.

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12. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

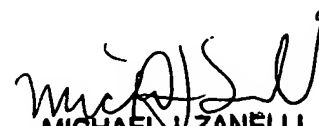
13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited documents are of general interest.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Zanelli whose telephone number is (703) 305-9756. The examiner can normally be reached on Monday-Thursday 5:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (703) 305-8233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/mjz


MICHAEL J. ZANELLI
PRIMARY EXAMINER